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THE DIPTERA PUPIPARA OF VENEZUELA

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It is customary to group under the head "Pupipara" the three Dipterous families, Hippoboscidae, Streblidae and Nycteribiidae, because they agree in the complete intrauterine development of the larva. The group is, however, artificial, these three families not being very closely related. They represent as many distinct offshoots of the Myiodaria, each with its own, non-pupiparous ancestor. They can lay no claim to form a Suborder by themselves, as is sometimes asserted in general textbooks.

What little is known thus far of the Pupipara of Venezuela is here brought together, with the addition of much unpublished information. Some new material was submitted by the United States National Museum; but I owe most of it to the generosity and industry of Venezuelan entomologists, Pablo J. Anduze, Mr. Gaston Vivas-Berthier and Dr. David R. Iriarte. Largely due to their efforts, the present list comprises 17 species of Hippoboscidae, 11 of Streblidae and 2 of Nycteribiidae. I have recently enumerated those reported from Colombia and Panamá (23 Hippoboscidae, 16 Streblidae and 2 Nycteribiidae). As the faunae of all three countries should be very similar, several species will yet be added to the Venezuelan list. On the other hand, *Pseudornithomyia ambigua, Stilbometopa podopostyla, Olfersia fumipennis, Microlynchia pusilla, Brachypteromyia neotropica, Basilia bellardii, Pterellipsis aranea, Aspidoptera megastigma* and *Paratrichobius longicrus* are at present known from Venezuela, but not from Colombia or Panamá, where most of them may be expected to occur.

HIPPOBOSCIDAE

The Hippoboscidae are all obligate, blood-sucking ectoparasites of birds or more rarely of mammals (exclusive of bats). Most species are winged, a few have the wings reduced or are wingless. *Lipoptena* is winged upon hatching, but soon becomes dealated. The body is much flattened and lacks combs of spines. The head is broad and depressed, with compound eyes of many facets; it protrudes horizontally from the anterior end, but is usually inserted in the deeply notched humeral margin of the thorax.

I have recently published two keys to the American genera, one in Spanish (1940, Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales, III, pt. 12, pp. 414-415) and the other in English (1940, Memorias de la Sociedad Cubana de Historia Natural, XIV, pp. 312-313). In these keys the second alternative of couplet 12 should be amended to read "Ocelli absent or vestigial", instead of "Ocelli absent".

Subfamily *Melophaginae*

1. *Melophagus ovinus* (Linné). — The sheep-ked was reported from domestic sheep in Venezuela (La Esperanza, Maracay; Campo Zootécnico Las Delicias) by Vogelsang (1939, Rev. Med. Veter. Paras. Caracas, I, p. 171).

2. *Lipoptena mazamae* Rondani. — This common parasite of South American deer *(Odocoileus)* and brocket *(Mazama)* I have seen from several localities in Venezuela: La Rubiera (F. M. Root). Sabanas de Guaniquito, Estado Guárico, off *Odocoileus virginianus gymnotes*. San Fernando, off the same host (Fiasson). Yagua (H. A. Beatty).

Subfamily *Ornithomyinae*

3. *Ornithoctona erythrocephala* (Leach).—Walker (1849, List Dipt. Brit. Mus., IV, p. 1143) and Bau (1929, Zoolog. Anzeiger, LXXXV, p. 11) record this fly from Venezuela, with-

out more definite locality. I have seen specimens from: Caracas (G. Umer). Mérida, off "gavilan" and *Accipiter chionogaster venezuelensis* Swann (P. Anduze). Zumbador, Estado Mérida, off a pigeon (J. D. Smith). Río Chacaíto, Estado Miranda (G. Vivas-Berthier). Naiguatá Peak, off *Columba albilinea* Bonaparte (E. G. Holt).

4. *Ornithoctona oxycera* Falcoz. — My Venezuelan specimens are from El Junquito, D. F., 2040 m., near Caracas (P. Anduze). Colonia Tovar, off *Traupis cyanocephala olivicyanea* (Lafresnaye) (E. Mondolfi).

5. *Ornithopertha nitens* (Bigot). — I have this species from Venezuela: Mérida (S. Briceño). I suspect that *Ornithopertha anthracina* Speiser is not separable from it. Speiser recognizes three species in the genus, but on color differences only, which are practically worthless in Hippoboscidae. Bau (1929, Zoolog. Anzeiger, LXXXV, p. 10) recorded *O. anthracina* from Venezuela, without more definite locality; but he probably saw the species I call *O. nitens.*

6. *Pseudornithomyia ambigua* Ad. Lutz, Neiva and Costa Lima. — I have seen several specimens from Venezuela: Macuto, Caracas, off *Pygochelidon cyanoleuca* (Vieillot) (N. Dearborn). El Valle, D. F., Caracas, off *Iridoprocne albiventer* (Vieillot) (C. H. Ballou). La Florida, off *Iridoprocne albiventer* (Vieillot) (C. H. Ballou).

7. — *Stilbometopa podopostyla* Speiser. — I have seen this fly from Venezuela: Los Robles, Guaira, off the white-tailed dove *Leptoptila verreauxi* (P. Anduze).

8. *Olfersia sordida* Bigot. — Venezuelan record: Puerto La Cruz, D. F., Caracas, off *Pelecanus occidentalis* Linné (E. G. Holt).

9. — *Olfersia bisulcata* Macquart. — Reported from Venezuela by Ad. Lutz (1928, Estud. Zool. Paras. Venezolanas, p. 9; as *Pseudolfersia vulturis,* which is a synonym), without more definite locality, off two species of vultures. I have seen it from the Caura Valley and from Puerto La Cruz, D. F., Caracas, off *Catharista urubu* (Vieillot) (E. G. Holt). I surmise

that the specimen from the Lower Sarare, which Falcoz (1930, Encyclop. Entom., B, Diptera, V, for 1929, p. 46) called *O. diomedeae,* was also *O. bisulcata.*

10. *Olfersia fumipennis* (Sahlberg). — I have seen this fly from Venezuela: Puerto La Cruz, D. F., Caracas, off *Pandion haliaetus* (Linné) (E. G. Holt).

11. *Olfersia coriacea* van der Wulp. — I have seen two specimens taken in Venezuela: Yagua (H. A. Beatty). The usual hosts are wild gallinaceous birds.

12. *Lynchia nigra* (Perty). — I have seen this species from Venezuela: San Felipe, off *Herpetotheres cachinans* (P. Anduze).

Olfersia raptatorum Ad. Lutz, Neiva and Costa Lima, reported off "gavilanes" from Venezuela by Ad. Lutz (1928, Estud. Zool. Paras. Venezolanas, p. 9), was almost certainly *Lynchia nigra.*

13. *Lynchia albipennis* (Say). — This species was reported from Venezuela, without more definite locality, off "garzas", by Ad. Lutz (1928, Estud. Zool. Paras. Venezolanas, p. 9; as *Olfersia palustris*).

14. *Pseudolynchia canariensis* (Macquart). — Surcouf and González-Rincones record this fly from domestic pigeons at Caracas (1912, Essai Diptères Vulnérants Vénézuela, II, p. 205; as *Lynchia maura*). Ad. Lutz found it also on domestic pigeons (1928, Estud. Zool. Paras. Venezolanas, p. 9; as *Lynchia lividicolor*). Martorell lists it from the State of Aragua, off domestic pigeon (1939, Jl. Agric. Univ. Puerto Rico, XXIII, p. 221; as *Lynchia maura* var. *lividicolor*). I have seen specimens from Hacienda Tazón near Caracas, sent by Dr. David R. Iriarte.

15. *Microlynchia pusilla* Speiser. — Ad. Lutz found this in Venezuela on wild pigeons (1928, Estud. Zool. Paras. Venezolanas, p. 9; without more definite locality). I have seen specimens from Caripito, Edo. Monagas (P. Anduze); and Yagua (H. R. Beatty).

16. *Brachypteromyia neotropica,* new species. — This will be described elsewhere in the near future. The holotype is a male from Galipán, D. F., Venezuela, off a square-tailed swift, *Aeronautes montivagus* (d'Orbigny and Lafresnaye).

Subfamily *Ornithoicinae*

17. *Ornithoica vicina* (Walker). — I have seen several specimens from Venezuela: Colonia Tovar, off *Scops* sp. (P. Anduze.

NYCTERIBIIDAE

The Nycteribiidae are specific parasites of bats. They are wingless, spider-like insects, always lacking halteres. The head is small, narrow, compressed and loosely attached to the dorsal surface of the prothorax in such a fashion that it may be stretched forward, raised vertically or folded back. The compound eyes are either absent or very small, of a few facets or of a single facet. The sides of the thorax bear anteriorly a comb, or ctenidium, of heavy spine-like setae and a similar ctenidium is present on the venter of the abdomen in all genera except one.

Nycteribiidae are much scarcer in the New World than in the tropical parts of the Old World. The few known American species probably all belong to the genus *Basilia,* which has a ventral ctenidium and eyes composed of two facets.

1. *Basilia bellardii* Rondani. — I have seen this species from Venezuela: Surukum, off a bat (P. Anduze). Río Cassiquiare (Olalla Brothers). A. Hase found it rather commonly at Puerto La Cruz near Caracas and at Ocumare de la Costa (west of La Guaira), on a small bat, *Myotis nigricans* Wied. He made very careful observations on the behavior and habits of this fly (1931, Zeitschr. f. Parasitenk., III, pp. 220-257 and 836). J. H. Schuurmans-Stekhoven used his material for an up-to-date description of the species (1931, *Op. cit.,* III, pp. 205-219). The specimens which I refer to *B. bellardii* agree with Schuurmans-Stekhoven's redescription. They are also

very similar to Curran's *Basilia dunni,* which I am inclined to regard as identical with *B. bellardii.* The differences to be noted between the figures are probably more apparent than real.

2. *Basilia myotis* Curran. — I have seen this species from Venezuela: "El Encantado" near Petare, Estado Miranda (E. Mondolfi and G. Vivas-Berthier). It was originally described from Panamá, where it is common on *Myotis nigricans* Wied; but it is also known from Colombia.

Some specimens collected by the Olalla Brothers on the Río Orinoco in Venezuela belong to a third species of *Basilia,* apparently undescribed.

STREBLIDAE

All Streblidae are specific ectoparasites of bats. They differ from the Nycteribiidae in that the head is attached in the usual manner, extending horizontally from the front margin of the thorax. The ventral side of the abdomen never bears a ctenidium. The compound eyes are small, of a few facets, or rudimentary. Wings may be present and fully developed, or much shortened, or absent. Halters are always present.

The New World genera may be separated by means of the subjoined key [1].

1. Under side of head with a comb (ctenidium) of spine-like bristles 2

   Head beneath without a comb of spine-like bristles.... 6

2. Comb of head consisting of 18-20 spines and restricted to the ventral surface. Mesonotal suture complete. Wings normal, large ..... *Eldunnia.*

   Comb of head consisting of numerous spines and extending over both dorso-lateral and ventral surfaces. Mesonotal suture interrupted in the middle.. 3

(1) The key which I published in 1940 (Rev. Acad. Colombiana Cienc. Ex. Fis. Nat., III, pp. 417-418) has been amended in several particulars.

3. Wings reduced to short, oval flaps. Eyes of a single, indistinct facet ..... *Metelasmus.*

Wings normal, large. Eyes of several facets 4

4. Hind legs not twice as long as fore legs, the hind femora short and swollen. Hind margin of frons overlapping the antennae dorsally ..... *Euctenodes.*

Hind legs twice as long as fore legs, the hind femora long and slender 5

5. Hind margin of frons not overlapping the antennae... ..... *Strebla.*

Hind margin of frons overlapping the antennae dorsally..... *Paraeuctenodes.*

6. Wings of normal size, functional..... 7

Wings small (narrow or short) or absent..... 13

7. Thorax and abdomen strongly compressed. Wings with a single cros-vein and three longitudinal veins.. ..... *Nycterophilia.*

Thorax depressed or moderately compressed. Wings with at least two cross-veins and six longitudinal veins 8

8. Head nearly trapezoidal, depressed, its hind margin as broad as the front margin of the thorax. Hind legs much longer than fore legs 9

Head more or less rounded, subglobular, its hind margin narrower than the front margin of the thorax... 11

9. Anterior margin of mesonotum with a median pair of sharp, triangular teeth fitting into a slight emargination of the vertex. Hind margin of head without flap-like projections. Front half of mesonotum with a median longitudinal suture ..... *Synthesiostrebla.*

Anterior margin of mesonotum without a median pair of teeth 10

10. Front half of thorax dorsally with a median longitudinal suture. Hind margin of head without flap-like projections ..... *Pseudostrebla.*

    Front half of thorax dorsally without longitudinal suture. Hind margin of head with two rounded projections overlapping the thorax.... *Stizostrebla.*

11. Hind legs not twice as long as fore legs. Coxae uniformly setose ..... *Trichobius.*

    Hind legs at least twice as long as fore legs. Coxae with strong bristles in addition to the setae..... 12

12. Fore femora with a diagonal row of massive spines. Humeral angles rouded off, not at all prominent. Transverse mesonotal suture interrupted medially and not connected with antero-median suture..... ..... *Paratrichobius.*

    Fore femora without a row of massive spines. Humeral angles distinct, broadly conical. Transverse mesonotal suture complete and connected with antero-median suture ..... *Speiseria.*

13. Wings entirely lacking 14

    Wings small, narrow or short..... 15

14. Hind legs about twice as long as fore legs..... ..... *Megistopoda* (?)

    Hind legs less than twice as long as fore legs..... ..... *Paradyschiria.*

15. Wings very narrow, erect. Hind legs about twice as long as fore legs. Head and thorax somewhat compressed ..... *Pterellipsis.*

    Wings short and broad, lying flat. Hind legs less than twice as long as fore legs..... *Aspidoptera* (1)

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(1) A new genus from Guatemala, to be described by Mr. Wenzel, will run out to couplet 15 of this key.

Subfamily *Streblinae*

1. *Strebla vespertilionis* (Fabricius).—The late Professor R. Thaxter described two parasitic fungi of the family Laboulbeniaceae taken from *Strebla vespertilionis* said to have come from Venezuela. These fungi he called *Glaeandromyces streblae* Thaxter (1931, Mem. Amer. Ac. Arts Sci., XVI, pt. 1, p. 114) and *Nycteromyces streblidinis* Thaxter (1917, Proc. Amer. Ac. Arts Sci., LII, p. 655; 1924, Mem. Amer. Ac. Arts. Sci., XIV, p. 317).

2. *Euctenodes mirabilis* Waterhouse. — I have seen one specimen from Venezuela: Los Canales, Naiguatá, D. F., Caracas (E. Mondolfi and G. Vivas-Berthier).

3. *Metelasmus pseudopterus* Coquillett. — I have seen this species from Venezuela: "El Encantado" near Petare, Estado Miranda (E. Mondolfi and G. Vivas-Berthier).

Subfamily *Trichobiinae*

4. *Trichobius mixtus* Curran (Syn.: *Trichobius dugesii* Jobling, 1938, Parasitology, XXX, p. 383, fig. 12. Not of Townsend, 1891). I have seen several specimens from Venezuela: Los Caobos, D. F., Caracas (E. Correa); Guamas, Yaracuy, off *Phyllostomus hastatus* Pallas (F. Pifano).

5. *Trichobius dugesii* C. T. Townsend (Syn.: *Trichobius blandus* Curran). — I have seen several specimens of this species from Venezuela: Los Canales, Naiguatá, D. F., Caracas (E. Mondolfi and G. Vivas-Berthier). Coastal Cave at Patanemo, Edo. Carabobo (P. Anduze).

L. R. Guimerães has recently shown that Jobling was in error when he identified *Trichobius mixtus* Curran as Townsend's *T. dugesii*; but that *T. blandus* Curran should instead bear Townsend's specific name (1941, Papéis Avulsos Depto. Zool. Secret. Agric. S. Paulo, I, Art. 23, pp. 213-216). Through the courtesy of Dr. R. H. Beamer, I was able to examine Townsend's type, from Guanajuato, México, now in the collections of the Department of Entomology at the University of Kansas, I can thus confirm Guimerães' conclusion.

It should be noted that the specimens which I listed from Panamá as *T. dugesii* were all *mixtus*, while those I called *blandus* were *dugesii* (1940, Rev. Acad. Colomb. Cienc. Ex. Fis. Nat., III, pt. 12, p. 418).

6. *Paratrichobius longicrus* (Ribeiro). — I have seen this species from Venezuela: La Guaira, off *Artibeus palmarum* (Lyon and Robinson).

7. *Paradyschiria dubia* (Rudow). — This species was originally described as *Lipoptena dubia* Rudow (1871, Zeitschr. Ges. Naturw., XXXVII, p. 122), from Venezuela, off *"Noctilio dorsatus"*. Speiser (1902, Zeitschr. Syst. Hym. Dipt., II, p. 160) regards his *P. fusca* as a synonym.

8. *Aspidoptera megastigma* (Speiser). — According to Speiser (1902, Zeitsch. Syst. Hym. Dipt., II, p. 160) some of the specimens included by Rudow in his *"Lipoptena dubia"* from Venezuela, off *"Noctilio dorsatus"*, were this species of *Aspidoptera.*

9. *Aspidoptera minuta* da Costa Lima. — I have seen two specimens from Venezuela: Guamas, Yaracuy, off *Phyllostomus hastatus* Pallas (F. Pifano).

10. *Speiseria ambigua* Kessel. — I have seen one specimen from Venezuela: Naiguatá, D. F., Caracas, off an unnamed bat (E. Mondolfi and G. Vivas-Berthier). This is *not* the same as *Synthesiostrebla amorphochili* Townsend, as Jobling thought (1939, Parasitology, XXXI, p. 488). All supposed *Synthesiostrebla* seen by Jobling, as well as those I recorded from Panamá, were really *Speiseria ambigua.*

11. *Pterellipsis aranea* Coquillet. — I have seen three specimens from Venezuela: "El Encantado", near Petare, Estado Miranda (E. Mondolfi and G. Vivas-Berthier).

A NEW SPECIES OF BUPRESTIDAE FROM VENEZUELA (COLEOPTERA)

By

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United States Department of Agriculture.

In a collection of Coleoptera received for identification from C. H. Ballou, the following new species was found.

Agrilaxia balloui, new species.

Female.—Elongate, broadly subtruncate in front, strongly narrowed posteriorly; head bluish or greenish black, becoming reddish cupreous toward clypeus; antenna violaceous black on transverse segments, greenish or cupreous on basal segments; pronotum purplish black, with the lateral and anterior margins and longitudinal median vitta green; elytra olive green, with a distinct purplish tinge; body beneath black, with distinct reddish-cupreous, greenish, and purplish reflections in different lights, the legs more greenish cupreous, and second abdominal sternite with a small, green spot on each side at lateral margin.

Head subtruncate when viewed from above; front broad, elongate, broadly, longitudinally depressed from occiput to clipeus, the sides slightly sinuate and parallel; surface coarsely, confluently foveolate-punctate; eyes large, strongly convex, parallel on inner margins; clypeus shallowly, arcuately emarginate in front; antenna short, serrate segments wider than long.

Pronotum about one-third wider than long, slightly wider in front than behind(widest near apical angles; sides feebly, arcuately rounded along apical half, obliquely narrowed posteriorly, parallel near posterior angles, which are rectangular;

anterior margin strongly sinuate, median lobe broadly rounded; base slightly arcuate; disk strongly convex, with a deep, broad, transverse depression on each side behind middle, and a small, round depression in front of scutellum; surface shallowly, coarsely, confluently foveolate-punctate, and indistinctly granulose. Scutellum slightly transverse, rounded at apex, densely, finely granulose.

Elytra at humeri as wide as pronotum near apical angles; sides parallel at base, broadly, deeply, arcuately constricted at middle (sides of abdomen exposed above), then obliquely narrowed to the tips, which are separately broadly rounded, and finely serrate; humeri rather prominent; basal depressions transverse, broad, and deep; disk slightly flattened; surface densely, finely granulose, and finely scabrous.

Abdomen beneath glabrous, indistinctly granulose; last sternite rather coarsely granulose toward apex, which is broadly rounded. Prosternum moderately convex, subtruncate in front, coarsely, shallowly foveolate-punctate, and finely, densely granulose; prosternal process broad, flat, strongly expanded behind anterior coxal cavities, apex acutely angulate. Tarsal claws simple.

Length 5.5 mm., width 1.5 mm.

Type locality. — El Valle, D. F., Venezuela.

Type. — In the United States National Museum, Nº 56420.

Described from a single female collected September 25, 1939, on *Melicoccus bijugatus* Jacq., by C. H. Ballou. (Ballou Nº 734).

This species resembles *Agrilaxia flavimana* (Gory), but it differs from that species in having the head broadly, longitudinally depressed, the antenna violaceous black, with the basal segments greenish or cupreous, the pronotum deeply depressed on each side behind the middle, and with a longitudinal, median, green vitta, the basal depressions on the elytra deeper, and the underside of the body with distinct reddish-cupreous, greenish, and purplish reflections.

Resumen

Se describe el *Agrilaxia balloui* sp. nov. pequeño buprestido minador de hojas obtenido sobre *Melicocus bijugatus* Jacq. en El Valle, D. F.

PHLEBOTOMUS ANDUZEI, A NEW *PHLEBOTOMUS* FROM VENEZUELA

By

L. E. Rozeboom *

Among a small collection of *Phlebotomus* taken by Dr. Pablo Anduze, at Gran Sabana, Venezuela, in December, 1941, were six females with spermatheca unlike those already described for American *Phlebotomus*. I am naming this insect in honor of the collector. The type slides will be placed in the U. S. National Museum, and the Instituto Nacional de Higiene, Caracas.

Phlebotomus anduzei, n. sp.

General appearance. Small, pale, buff colored flies; mesonotum, thoracic pleurae, and abdomen of the same color. Eyes black. Legs pale underneath, darker on outer surface.

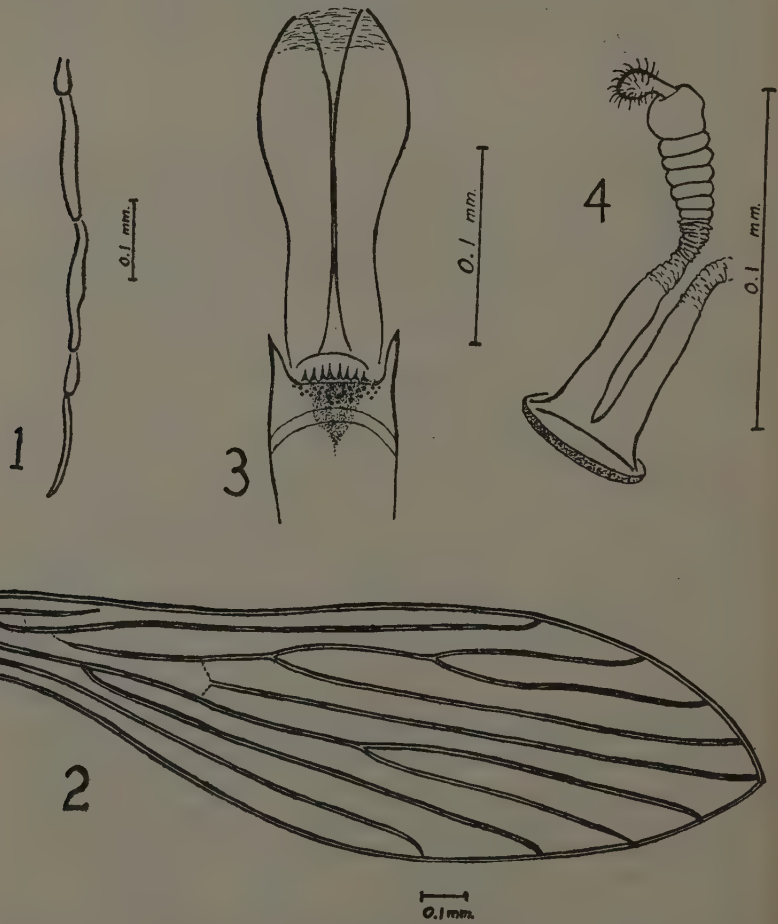
Palp (fig. 1). The average lengths of the segments of nine palps measured were as follows: I, 0.045 mm.; II, 0.151 mm.; III, 0.160 mm.; IV, 0.056 mm.; V, 0.137 mm. However, in three of the palps, segment II was equal to segment III, or even very slightly longer. The palpal formula therefore is 1, 4, 5, $2 \geqslant 3$.

Wing (fig. 2). The following average measurements were obtained from eleven wings. Length, 1.98 mm.; width, 0.565 mm.; α, 0.546 mm.; β, 0.321 mm.; γ, 0.139 mm. $\alpha/\beta = 1.7$.

Buccopharynx (fig. 3) usually with eight horizontal teeth, but in two of the specimens there is a small extra tooth at each end of the horizontal row, making 10 in all. A number of small ventral teeth; those in the center most prominent. Pigmented area conspicuous, triangular.

* From the Department of Parasitology, the Johns Hopkins School of Hygiene and Public Health, Baltimore, Maryland.

Spermatheca (fig. 4) with an enlarged distal segment, and about six distinct rings. "Head" fairly large, attached to the enlarged distal segment by a narrow "neck". Near the



Detalles morfológicos de **Phlebotomus anduzei** sp. nov. 1, Palpo. 3, Armadura bucofaríngea. 4, Receptáculo seminal. 2, Ala.

juntion with the duct, the spermatheca narrows and the rings are very small and indistinct, giving a wrinkled appearance to the organ in this region. Duct slightly longer than the body of the spermatheca; at its junction with the spermatheca the duct is wrinkled, but is smooth for the remainder of its length. The median duct is so short that it is almost non-existent; it seems to be nothing more than a shallow evagination of the vagina, into which the lateral ducts open.

Phlebotomus anduzei belongs to the group of American *Phlebotomus* with short palps, that is, with the fifth segment very short. The other members of this group are *amazonensis, davisi, panamensis, squamiventris, lloydi, arthuri, intermedius, whitmani, antunesi, ayrozai, paraensis, chagasi,* and *rostrans.*

The females of *ayrozai, paraensis,* and *antunesi,* all from Brazil, are unknown. Costa Lima (1941) says that in *paraensis* the third palpal segment is longer than segments 4 and 5 together; in *anduzei* segment 3 is shorter than $4 + 5$. The palp of the male of *ayrozai* (Barretto and Countinho, 1940) also has the third segment longer than $4 + 5$, which should distinguish the female of this species from *anduzei.* The palp of the male of *antunesi* (Coutinho, 1939) has a formula of 1, 4, 2, 5 and 3, while that of *anduzei* is 1, 4, 5, $2 \geqslant 3$; furthermore, the genital filaments of *antunesi* are very long, and it would seem unlikely that this male could be the mate of *anduzei,* which has very short spermathecal ducts. Antunes and Coutinho (1939) call attention to the correlation between the length of the genital filaments and of the spermathecal ducts in separating *whitmani* from *intermedius.*

P. amazonensis, davisi, panamensis, squamiventris, lloydi, arthuri, and *chagasi* can be separated as a group from *anduzei* by their characteristic spermathecae, which consist of a series of superimposed rings, the small distal end of each ring fitting into the broad base of the ones preceding it, forming a strobiloid body (Root, 1934; Antunes, 1937; Fonseca, 1936; Costa Lima, 1941).

The spermathecae of *intermedius* and *whitmani* resemble somewhat the spermatheca of *anduzei.* These two species seem

to be more closely related to *anduzei* than any of the other short-palp American *Phlebotomus*. The spermathecal ducts of *whitmani* are very long, in marked contrast to the very short ducts of *anduzei*. In *intermedius* these ducts are somewhat longer than they are in *anduzei*; furthermore, in the former species the spermatheca does not have the swollen distal ring so characteristic of this organ in *anduzei*, and there seem to be differences also in the shape of the distal appendage (Root, 1934; Antunes and Coutinho, 1939).

Finally, the palp of *P. rostrans* should readily distinguish this species from *anduzei*. Costa Lima (1932) and Dyar (1929) describe the palp of *rostrans* as having a very short and broad fourth segment, much wider than the other segments. The fifth segment also is very short, so that the fourth and fifth together are shorter than the third.

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Resumen

Se describe el *Plebotomus anduzei* sp. nov. capturado en la selva de Surukum en la Gran Sabana. Pertenece al grupo de flebotomos que tienen el quinto segmento de los palpos muy corto.

A NEW *BRACHYMETRA* FROM VENEZUELA (HEMIPTERA-GERRIDAE)

By

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Through the kindness of Mr. G. Vivas-Berthier, the authors have received a number of specimnes of water-striders from Venezuela for identification. Among these forms is a series of individuals of an undescribed species of *Brachymetra.*

B. unca Shaw is slightly more robust than *B. anduze* n. sp. and the male has a thicker and much longer first genital segment and much longer claspers. The first abdominal tergite in the female of *unca* is without the prominence. *B. lata* Shaw is a more slender species, with larger eyes and with almost straight male clasper. *B. albinervis* is a much smaller species and is very widely distributed in tropical America. Specimens of the latter form are before us from Panamá, Perú, Argentina, Paraguay, Trinidad, Grenada and Guatemala, and show considerable variation in size and color. It is also known from Bolivia and Honduras. *Brachymetra kleopatra* is a large, robust species. Apterous and macropterous forms of it were taken in Trinidad, B. W. I., in company with *unca* and *albinerva,* October, 1939, by C. J. Drake.

Brachymetra anduze, sp. nov.

Very similar to *B. kleopatra* Kirkaldy and *B. unca* Shaw in size, form, and general appearance. Brownish with the margins of pronotum and connexivum and most of the front femora beneath and entire tibiae and tarsi dark fuscous. Antennae dark, segment I slightly bent before the base and faintly enlarged distally; proportions, 41:15:24:20. Rostrum

reaching slightly behind front coxae, the apical part darkened. Eyes black, oblique, extending for nearly one-half their own length behind base of hood, the greatest length of each greater than width of vertex. Front femora moderately swollen, yellowish brown above.

Pronotum projecting as far posteriorly as in apterous *kleopatra,* but broadly rounded at apex, subequal in width in front to head through eyes. Abdomen broader in both sexes than in *kleopatra,* the first abdominal tergite more shallowly excavated behind in the male and with a distinct prominence before the hind margin in the female. Connexiva a little narrower than in *kleopatra* and more prominently margined with fuscous. Last tergite in male truncate behind. Male genital segments distinctly cylindrical, the first segment a little thicker than the second, above as long as two preceding segments, roundly produced beneath as in *B. unca.* Body beneath yellowish.

Length, 8:00 mm.; width, 2.80 mm.

Type, apterous male, Los Lechozos, D. F., Venezuela, March 13, 1938, G. Vivas-Berthier, collector; *allotype,* apterous female, Los Venados, D. F., Venezuela, Nov. 6, 1938. Fourteen *paratypes,* same locality as types, and from Curupao, D. F., Venezuela, Sept. 12, 1939, in collection of Dr. Anduze and authors. Types in authors collections. The macropterous form is unknown. The species is named in honor of Dr. Pablo J. Anduze, who is doing excellent work and actively engaged in the study of the insects of Venezuela.

Resumen

El autor describe al *Brachymetra anduze* sp. nov. capturada por G. Vivas-Berthier en Los Lechosos y en Curupao, D. F.

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The Editorial Board earnestly, begs all collaborators to send their papers for publication as soon as possible so that an attempt may be made to publish at more regular intervals. In order to avoid loss in transit, manuscripts should be sent by AIR MAIL.

CANJE - EXCHANGE

Se solicita canje por Culicidae, Reduviidae y Siphonaptera venezolanos. P. J. Anduze, Instituto de Higiene, Caracas, Venezuela.

Wanted: Culicidae, Reduviidae and Siphonaptera in exchange for Venezuelan material. P. J. Anduze, Instituto de Higiene, Caracas, Venez.